subject suffering from at least one addictive disease by examining a bodily sample from a subject for the presence of a variant human mu opioid receptor comprising an amino acid sequence having at least one variation in SEQ ID NO:2. More specifically, the present invention extends to a method for determining a therapeutically effective amount of therapeutic agent for treating at least one addictive disease to administer to a subject suffering from the at least one addictive disease, relative to a therapeutically effective amount of the therapeutic agent to administer to a standard suffering from the at least one addictive disease, wherein the method comprises the steps of removing a bodily sample comprising a human mu opioid receptor from the subject, and determining whether the human mu opioid receptor present in the sample comprises an amino acid sequence having at least one variation in SEQ ID NO:2, wherein the variation comprises:

> Ser23Pro or conserved variants thereof;

> Ser42Thr or conserved variants thereof; or

> addition of a Gly residue following Gly63 or conserved variants thereof.

The presence of at least one variation in the human mu opioid receptor of the bodily sample is expected to be indicative of therapeutically effective amount of the therapeutic agent to administer to the subject to treat the at least one addictive disease of the subject relative to the therapeutically effective amount of the therapeutic agent to administer to the standard suffering from the at least one addictive disease, wherein the human mu opioid receptor of the standard comprises an amino acid sequence of SEQ ID NO:2.

Examples of at least one addictive disease includes, but is not limited to opioid addiction, cocaine addiction or addiction to other psychostimulants, nicotine addiction, barbiturate or sedative hypnotic addiction, anxiolytic addiction, or alcohol addiction. Furthermore, examples of therapeutic agents having applications of the present invention include methadone, LAAM, maltrexone, or buprinorphine, to name only a few.

Furthermore, the present invention extends to a method for diagnosing a disease or disorder related to a physiological function regulated by the HPA or HPG axes of the neuroendocrine system. The HPA and HPG axes play an important role in regulation of numerous physiological activities such as reproductive and sexual function, gastrointestinal motility,